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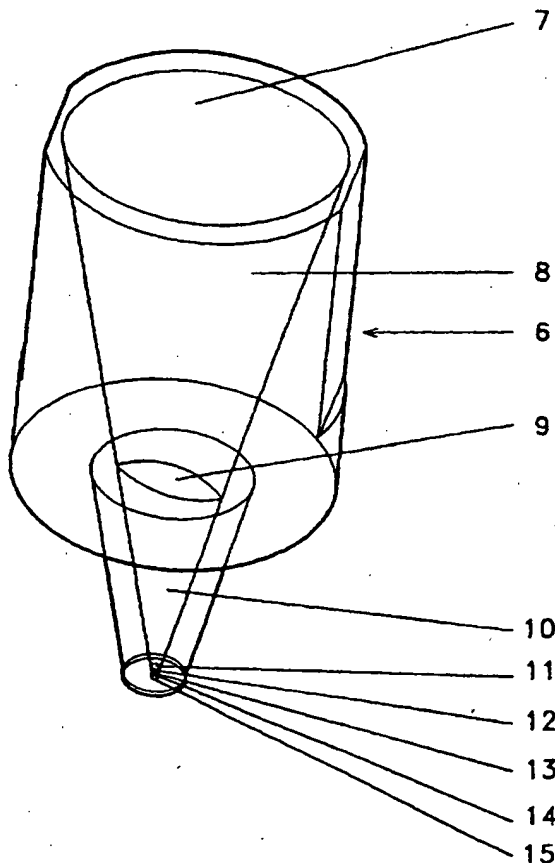
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(54) Title: **IMPROVED FLOW CYTOMETER NOZZLE AND FLOW CYTOMETER SAMPLE HANDLING METHODS**



(57) Abstract: An improved nozzle system for a flow cytometer and accompanying methods have been invented for a high efficiency orientation and sorting process of a flat sample and dedicates items such as equine or bovine sperm cells. This improved nozzle system comprises a nozzle (16) with a novel interior surface geometry that can both gently accelerate the cells and can include an elliptical-like, single torsional interior surface element within (c) the nozzle, i.e., a single torsional orientation nozzle (6). The elliptical-like, single torsional interior surface element (e.g.) (8, 9, 10) may have a laminar flow surface and may produce the simplest flow path for applying minimal forces which act in either an accelerative nature or orienting hydrodynamic forces, namely, the single torsional orientation forces, to orient a flat sample (16) such as animal sperm cells into a proper direction for an analyzing and efficiently sorting process in clinical use, for research and for the animal insemination industry.

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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, COMPENDEX, SCISEARCH, PAJ, BIOSIS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

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☒ Further documents are listed in the continuation of box C.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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Information on patent family members

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